

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims * and ADD new claims * in accordance with the following:

Please AMEND claims 1, 15, and 30 in accordance with the following:

1. (currently amended) An optical node device applicable to an optical network including a closed loop provided by an optical fiber, comprising:

a tunable wavelength selecting element adapted to input WDM signal light obtained by wavelength division multiplexing a plurality of optical signals having different wavelengths, the tunable wavelength selecting element having a function of dropping at least one optical signal from the WDM signal light and a function of adding at least one optical signal to at least one unassigned wavelength channel of the WDM signal light; and

a wavelength selecting filter optically connected to said tunable wavelength selecting element for removing noise present in any bands other than a signal band of each optical signal passing through said tunable wavelength selecting element; ~~wherein~~

said wavelength selecting filter ~~comprises~~ comprising an optical demultiplexer having an input port for inputting WDM signal light output from said tunable wavelength selecting element and N output ports for respectively outputting said N optical signals separated from said WDM signal light, and an optical multiplexer having N input ports for respectively inputting N optical signals output from said demultiplexer, and an output port for outputting WDM signal light obtained by wavelength division multiplexing said N optical signals input to said N input ports;

~~said transmission band of said optical demultiplexer per wavelength channel has a central wavelength substantially coinciding with a first wavelength shorter than the central wavelength of each wavelength channel of said WDM signal light; and~~

~~said transmission band of said optical multiplexer per wavelength channel has a central wavelength substantially coinciding with a second wavelength longer than the central wavelength of each wavelength channel of said WDM signal light~~

wherein said transmission band of each of said optical demultiplexer and said optical multiplexer per wavelength channel is wider than the band of each wavelength channel of said

WDM signal light;

wherein transmission bands per wavelength channel of said optical demultiplexer and multiplexer have central wavelengths shifted from the central wavelength of each wavelength channel of said WDM signal light toward shorter wavelength and longer wavelength, respectively, or

transmission bands per wavelength channel of said optical demultiplexer and multiplexer have central wavelengths shifted from the central wavelength of each wavelength channel of said WDM signal light toward longer wavelength and shorter wavelength, respectively.

2. - 3. (cancelled)

4. (previously presented) An optical node device according to claim 1, wherein:

, said N- input ports of said optical multiplexer being optically connected to said output ports of said optical demultiplexer, respectively;

said optical demultiplexer and said optical multiplexer being arranged along said closed loop.

5. (previously presented) An optical node device according to claim 4, wherein:

said WDM signal light has a plurality of wavelength channels arranged at substantially equal intervals in the wavelength domain;

said input port and said i-th (i is an integer satisfying $1 \leq i \leq N$) output port of said optical demultiplexer are coupled by said transmission band of said optical demultiplexer including the wavelength of any one of said wavelength channels;

said j-th (j is an integer satisfying $1 \leq j \leq N$) input port and said output port of said optical multiplexer are coupled by said transmission band of said multiplexer including the wavelength of any one of wavelength channels.

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (original) An optical node device according to claim 4, wherein each of said optical demultiplexer and said optical multiplexer comprises an arrayed waveguide grating.

10. (original) An optical node device according to claim 1, wherein said tunable wavelength selecting element comprises an acousto-optic tunable filter.

11. (original) An optical node device according to claim 1, wherein said tunable wavelength selecting element has a first input port for inputting said WDM signal light, a second input port for inputting an optical signal to be added to said WDM signal light, a first output port for outputting an optical signal to be passed through said tunable wavelength selecting element, and a second output port for outputting an optical signal to be dropped from said WDM signal light.

12. (original) An optical node device according to claim 11, further comprising:
an optical coupler having a plurality of input ports and an output port connected to said second input port of said tunable wavelength selecting element;
an optical modulator connected to each of said plurality of input ports of said optical coupler; and
a tunable light source connected to said optical modulator.

13. (original) An optical node device according to claim 11, further comprising:
an optical coupler having an input port connected to said second output port of said tunable wavelength selecting element, and a plurality of output ports;
a tunable filter connected to each of said plurality of output ports of said optical coupler;
and
an optical receiver connected to said tunable filter.

14. (original) An optical node device according to claim 1, further comprising an optical amplifier connected to said tunable wavelength selecting element.

15. (currently amended) A system comprising:

a closed loop provided by an optical fiber; and

a plurality of optical node devices arranged along said closed loop;

at least one of said plurality of optical node device comprising:

a tunable wavelength selecting element adapted to input WDM signal light obtained by wavelength division multiplexing a plurality of optical signals having different wavelengths, said tunable wavelength selecting element having a function of dropping at least one optical signal from said WDM signal light and a function of adding at least one optical signal to at least one unassigned wavelength channel of said WDM signal light; and

a wavelength selecting filter optically connected to said tunable wavelength selecting element for removing noise present in any bands other than a signal band of each optical signal passing through said tunable wavelength selecting element; ~~wherein~~

~~said wavelength selecting filter comprises~~ comprising:

an optical demultiplexer having an input port for inputting WDM signal light output from said tunable wavelength selecting element and N output ports for respectively outputting said N optical signals separated from said WDM signal light, and an optical multiplexer having N input ports for respectively inputting N optical signals output from said demultiplexer, and an output port for outputting WDM signal light obtained by wavelength division multiplexing said N optical signals input to said N input ports;

~~said transmission band of said optical demultiplexer per wavelength channel has a central wavelength substantially coinciding with a first wavelength shorter than the central wavelength of each wavelength channel of said WDM signal light; and~~

~~said transmission band of said optical multiplexer per wavelength channel has a central wavelength substantially coinciding with a second wavelength longer than the central wavelength of each wavelength channel of said WDM signal light~~

wherein said transmission band of each of said optical demultiplexer and said optical multiplexer per wavelength channel is wider than the band of each wavelength channel of said WDM signal light;

wherein transmission bands per wavelength channel of said optical demultiplexer and multiplexer have central wavelengths shifted from the central wavelength of each wavelength channel of said WDM signal light toward shorter wavelength and longer wavelength, respectively, or

transmission bands per wavelength channel of said optical demultiplexer and multiplexer have central wavelengths shifted from the central wavelength of each wavelength channel of

said WDM signal light toward longer wavelength and shorter wavelength, respectively.

16. (original) A system according to claim 15, further comprising at least one optical amplifier arranged along said closed loop.

17. (original) A system according to claim 15, wherein said tunable wavelength selecting element has a first input port for inputting said WDM signal light, a second input port for inputting an optical signal to be added to said WDM signal light, a first output port for outputting an optical signal to be passed through said tunable wavelength selecting element, and a second output port for outputting an optical signal to be dropped from said WDM signal light.

18. (original) A system according to claim 17, wherein said at least one optical node device further comprises:

an optical coupler having a plurality of input ports and an output port connected to said second input port of said tunable wavelength selecting element;

an optical modulator connected to each of said plurality of input ports of said optical coupler; and

a tunable light source connected to said optical modulator.

19. (original) A system according to claim 17, wherein said at least one optical node device further comprises:

an optical coupler having an input port connected to said second output port of said tunable wavelength selecting element, and a plurality of output ports;

a tunable filter connected to each of said plurality of output ports of said optical coupler; and

an optical receiver connected to said tunable filter.

20 – 21 (cancelled)

22 - 24 (cancelled)

25 – 29 (cancelled)

30. (currently amended) A system comprising:

a closed loop provided by an optical fiber; and

a plurality of optical node devices arranged along said closed loop, said plurality of optical node devices including a first optical node device and a second optical node device, said first and second optical node devices comprising:

a tunable wavelength selecting element adapted to input WDM signal light obtained by wavelength division multiplexing a plurality of optical signals having different wavelengths, said tunable wavelength selecting element having a function of dropping at least one optical signal from said WDM signal light and a function of adding at least one optical signal to at least one unassigned wavelength channel of said WDM signal light; and

a wavelength selecting filter optically connected to said tunable wavelength selecting element for removing noise present in any bands other than a signal band of each optical signal passing through said tunable wavelength selecting element, said wavelength selecting filter comprising an optical demultiplexer and an optical multiplexer, said optical demultiplexer having an input port for inputting WDM signal light output from said tunable wavelength selecting element and N output ports for respectively outputting N optical signals separated from said WDM signal light, said optical multiplexer having N input ports for respectively inputting said N optical signals output from said optical demultiplexer and an output port for outputting WDM signal light obtained by wavelength division multiplexing said N optical signals input to said N input ports, wherein

~~said transmission band per wavelength channel of said optical demultiplexer and said optical multiplexer included in said first optical node device has a central wavelength substantially coinciding with a first wavelength shorter than the central wavelength of each wavelength channel of said WDM signal light; and~~

~~said transmission band per wavelength channel of said optical demultiplexer and said optical multiplexer included in said second optical node device has a central wavelength substantially coinciding with a second wavelength longer than the central wavelength of each wavelength channel of said WDM signal light~~

wherein said transmission band of each of said optical demultiplexer and said optical multiplexer per wavelength channel is wider than the band of each wavelength channel of said WDM signal light;

wherein said wavelength selecting filters of said first optical node device and said second optical node device have transmission bands per wavelength channel of which central wavelengths are shifted from the central wavelength of each wavelength channel of said WDM signal light toward shorter wavelength and longer wavelength, respectively, or

said wavelength selecting filters of said first optical node device and said second optical

Serial No. 09/960,405

node device have transmission bands per wavelength channel of which central wavelengths are shifted from the central wavelength of each wavelength channel of said WDM signal light toward longer wavelength and shorter wavelength, respectively.